

**Amendments to the Drawings:**

Please substitute the accompanying replacement drawings for all Figs., i.e., Figs. 1A, 1B and 2-10.

## Remarks

Reconsideration of the present application, as amended, is respectfully requested.

Paragraph on page 1 and 11 of the specification were amended to correct typographical errors.

A new set of drawings is submitted to substitute hand-written reference numerals with more formal numerals.

Of previously pending claims 1-36, claims 1-10 and 17-21 were allowed; claims 11, 14-16, 22, 25-28, 30-32 and 36 were rejected; and claims 12, 13, 23, 24, 29 and 33-35 were objected to. In particular, claims 11, 14-16, 22 and 25-26 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,950,399, which issued September 27, 2005 to D. Bushmitch *et al.* Claims 32 and 36 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Pub. No. 2003/0016692, published January 23, 2003, S. A. Thomas *et al.* inventors. Claims 27-28, and 30-31 were rejected under 35 U.S.C. § 103(a) as being obvious by the previously cited Bushmitch patent application in view of U.S. Patent No. 6,515,963 which issued to Bechtolsheim *et al.* The applicants address these rejections with respect to independent claims 11, 22, 27 and 32, of which the first three claims have been amended to better point the applicants' invention.

In rejecting independent claims 11 and 22, the Examiner stated:

Regarding claims 11, 14-16, 22, and 25-26, Bushmitch discloses a method for forwarding packets upstream from a subscriber unit to a central access point, the method comprising:

- (a) identifying a number (N) of available service flows between the subscriber unit and the central access point (see Figs. 2 and 3, element 314 and 316, col. 4, lines 15-16, 51-64);
- (b) sending a first packet from the subscriber unit to the central access point on a first service flow included in the N available service flows (see Figs. 1-3, col. 3, lines 31-38, col. 4, lines 3-19, and col. 5, lines 4-18);
- (c) sending an Nth packet from the subscriber unit to the central access point on an Nth service flow included in the N available service flows (see Figs. 1-3, col. 3, lines 31-38, col. 4, lines 3-19, and col. 5, lines 4-18).

With due respect to the Examiner, the cited Bushmitch patent does not disclose the invention recited in claims 11 and 22. The cited portions of the cited patent describe upstream

data transfer according to DOCSIS service flow protocols and operations. This is also described in the applicants' specification on pages 4-6 and Figs. 3-5. However, there is nothing in claim 11 (nor in claim 22) by which a packet is sent on a particular service flow by the packet's QoS (Quality of Service) requirements. "A service flow is defined as a unidirectional flow of data from the CMTS to the CM or vice versa for a pre-defined QoS class." Col. 4, lines 13-15. Instead, as recited in the claims, a packet associated with a session is sent to a particular service flow by the packet's order in the session. That is, claim 11 recites, "...sending a first packet from the subscriber unit to the central access point on a first service flow included in the N available service flows; and sending an Nth packet from the subscriber unit to the central access point on an Nth service flow included in the N available service flows." Dependent claims 12 and 13 make this distinction even clearer. The cited portions of the Bushmitch patent have no such teachings. Hence the Bushmitch patent does not anticipate claim 11 and claim 22 with its similar language). Both claims should be patentable.

Claims 12-16 and 23-26 should also be allowable for at least being dependent upon allowable base claims.

With respect to independent claim 27, the claim was rejected for obviousness, for which the Examiner reasoned:

Regarding claims 27, 28, 30, and 31, Bushmitch discloses a device for forwarding packets to a central access point, the device comprising:

- (a) a routing component (see Fig. 3, col. 4, lines 40-45);
- (b) the routing component is arranged to provide the information associated with the first packet (see Fig. 3, col. 4, lines 40-45);
- (c) a first service flow identifier, the first service flow identifier being associated with the value (see Fig. 3, col. 4, lines 46-64);

Bushmitch does not disclose a hashing component provides the packet to the first service flow identifier and the hashing component being arranged to apply a hash function to information associated with a first packet to determine a value. However, Bechtolsheim discloses a hashing component provides the packet to a first service flow identifier and the hashing component being arranged to apply the hash function to information associated with the first packet to determine the value (see Figs. 3 and 4, col. 6, lines 26-50, col. 7, lines 47-50). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the hashing component provides the packet to the first service flow identifier and being arranged to apply the hash function to information associated the packet to determine the value teaching by Bechtolsheim with Bushmitch. The motivation for doing so would have been to

provide to identify good flows from bad on a packet by packet basis read on column 3, lines 48-50. Therefore, it would have been obvious to combine Bechtolsheim and Bushmitch to obtain the invention as specified in the claims 27, 28, 30, and 31.

As amended, claim 27 reads:

A device for forwarding packets to a central access point through a number of available service flows, the device comprising:  
a routing component;  
a hashing component, the hashing component being arranged to apply a hash function to information associated with a first packet to determine a value, wherein the routing component is arranged to provide the information associated with the first packet to the hashing component and the potential number of determined values at least equal to the number of available service flows; and  
a first service flow identifier, the first service flow identifier being associated with the value, wherein the hashing component provides the packet to the first service flow identifier.

Thus the amended claim calls for “the potential number of determined values (from the hashing component) at least equal to the number of available service flows (parenthetical expression added).” The applicants have not found a teaching of such a limitation is found in the either of the cited references. Hence claim 27 is not obvious over the cited Bushmitch and Bechtolsheim patents and should be patentable.

Dependent claims 28-31 should also be patentable for at least being dependent upon an allowable base claim.

Finally with respect to independent claim 32 which was rejected for anticipation, the Examiner stated:

Regarding claims 32 and 36, Thomas discloses a device for forwarding packets to a central access point, the device comprising:  
(a) a receiving component, the receiving component being arranged to receive a plurality of packets that are to be forwarded to a central access point (see Figs. 1 and 3, paragraph [0068]);  
(b) a plurality of service flow identifiers which are associated with a plurality of service flows (see Figs. 1 and 3, paragraphs [0010]-[0012]);  
(c) a routing component, the routing component being arranged to receive the plurality of packets from the receiving component; the routing component further being arranged to provide a plurality of packets to the plurality of service flow identifiers on a substantially round-robin basis (see Fig. 3, paragraph [0069]-[0072]).

Again with due respect to the Examiner, the applicants have been unable to find the description of “a routing component, the routing component being arranged to receive the plurality of packets from the receiving component; the routing component further being arranged to provide a plurality of packets to the plurality of service flow identifiers on a substantially round-robin basis” in the cited portions of the Thomas patent application. In particular, the applicants request the particular identification of a routing component being arranged to provide a plurality of packets to the plurality of service flow identifiers on a substantially round-robin basis. Without such a teaching, the applicants assert that claim 32 is not anticipated by the cited prior art and should be allowable.

Claims 33-36 should also be allowable for at least being dependent upon an allowable base claim.

Therefore, in view of the amendments above and the remarks directed thereto, the applicants request that all rejections be removed, that claims 1-36 be allowed, and the case be passed to issue. If a telephone conference would in any way expedite the prosecution of this case, the Examiner is asked to call the undersigned at (408) 868-4088.

Respectfully submitted,

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